

1. (twice amended) An isolated nucleic acid fragment comprising a nucleic acid sequence selected from the group consisting of (a) a nucleic acid sequence encoding a [fatty acid desaturase or a fatty acid desaturase-related] plant plastid or microsomal enzyme which catalyzes the formation of a double bond between carbon positions 3 and 4 numbered from the methyl end of a fatty acyl chain wherein said enzyme has [with] an amino acid identity of 50% or greater to the polypeptide encoded by SEQ ID NOS:2, 5, 7, 9, 11, 13, 15 or 17 or (b) a nucleic acid sequence or part thereof which is useful in antisense inhibition or sense suppression of endogenous desaturase activity in a transformed plant wherein the nucleic acid sequence encodes a polypeptide with an amino acid identity of 50% or greater to the polypeptide encoded by SEQ ID NOS:2, 5, 7, 9, 11, 13, 15 or 17 or part thereof.